

IN THE CLAIMS:

1. (Currently amended) A purified An isolated protein comprising an amino acid sequence of SEQ ID NO: 2 selected from the group consisting of the following sequences:

- (a) ~~an amino acid sequence of SEQ ID NO: 2, and~~
- (b) ~~a modified amino acid sequence of the amino acid sequence of SEQ ID NO: 2 that has one to several modifications selected from a substitution, a deletion, an addition and an insertion and has cyclo(D-lactyl-L-N-methylleucyl-D-3-phenyllactyl-L-N-methylleucyl-D-lactyl-L-N-methylleucyl-D-3-phenyllactyl-L-N-methylleucyl (PF1022) synthetase activity~~

2. (Withdrawn) A polynucleotide encoding the protein of claim 1.

3. (Withdrawn) A polynucleotide according to claim 2, which comprises the DNA sequence of SEQ ID NO: 1.

4. (Withdrawn) A polynucleotide selected from the group consisting of the following sequences:

- (c) a DNA sequence of SEQ ID NO: 1,
- (d) a nucleotide sequence that has at least 70% homology to the DNA sequence of SEQ ID NO: 1 and encodes a protein having cyclic depsipeptide synthetase activity,
- (e) a modified DNA sequence of the DNA sequence of SEQ ID NO: 1 that has one or more modifications selected from a substitution, a deletion, an addition and an insertion and encodes a protein having cyclic depsipeptide synthetase activity, and
- (f) a nucleotide sequence that hybridizes with the DNA sequence of SEQ ID NO: 1 under stringent conditions and encodes a protein having cyclic depsipeptide synthetase activity.

5. (Withdrawn) The polynucleotide according to claim 4, wherein sequence (d) is a nucleotide sequence that has at least 80% homology to the DNA sequence of SEQ ID NO: 1.

6. **(Withdrawn)** The polynucleotide according to claim 4, wherein sequence (d) is a nucleotide sequence that has at least 90% homology to the DNA sequence of SEQ ID NO: 1.

7. **(Withdrawn)** A recombinant vector comprising the polynucleotide of claim 2 or claim 4.

8. **(Withdrawn)** A host comprising the expression vector of claim 7.

9. **(Withdrawn)** The host according to claim 8, which expresses a cyclic depsipeptide synthetase.

10. **(Withdrawn)** The host according to claim 8, which is a substance PF1022-producing microorganism.

11. **(Withdrawn)** A method for producing a cyclic depsipeptide, which comprises the steps of culturing the host of claim 8 and collecting the cyclic depsipeptide from the culture medium.

12. **(Withdrawn)** The method according to claim 11, wherein the cyclic depsipeptide is the substance PF1022 and a derivative thereof.

13. **(Currently amended)** A method for producing a protein having cyclo(D-lactyl-L-N-methyllleucyl-D-3-phenyllactyl-L-N-methyllleucyl-D-lactyl-L-N-methyllleucyl-D-3-phenyllactyl-L-N-methyllleucyl) (PF1022) synthetase activity, which comprises the steps of culturing a host cell transformed with a vector containing a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 2[.] ;
- (b) the nucleotide sequence of SEQ ID NO: 1[.] ; and
- (c) ~~a nucleotide sequence that has at least 80% homology to the nucleotide sequence of SEQ ID NO: 1 and encodes a protein having PF1022 synthetase activity; and~~

(d) a nucleotide sequence that hybridizes with the nucleotide sequence of SEQ ID NO: 1 under stringent conditions at 0.2 x SSC concentration (1 x SSC: 15 mM trisodium citrate, 150 sodium chloride) in a 0.1 % SDS solution at 60°C for 15 minutes and which encodes a protein having PF1022 synthetase activity; and
collecting the protein from the culture medium.

14. (Cancelled)

15. (Currently amended) ~~A purified~~ An isolated protein encoded by a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding the amino acid sequence of SEQ ID NO: 2;
(b) the nucleotide sequence of SEQ ID NO: 1; and
(c) ~~a nucleotide sequence that has at least 80% homology to the nucleotide sequence of SEQ ID NO: 1 and encodes a protein having cyclo(D-lactyl-L-N-methylleucyl-D-3-phenyllactyl-L-N-methylleucyl-D-lactyl-L-N-methylleucyl-D-3-phenyllactyl-L-N-methylleucyl(PF1022) synthetase activity; and~~

(d) a nucleotide sequence that hybridizes with the nucleotide sequence of SEQ ID NO: 1 under stringent conditions at 0.2 x SSC concentration (1 x SSC: 15 mM trisodium citrate, 150 sodium chloride) in a 0.1 % SDS solution at 60°C for 15 minutes and which encodes a protein having PF1022 synthetase activity.

16-17. (Cancelled)